

A NEW SPECIES OF *TRACHYMYRMEX* FUNGUS-GROWING ANT
(HYMENOPTERA: MYRMICINAE: ATTINI) FROM PARAGUAY¹

Harold G. Fowler

Abstract.—A new species of fungus-growing ant, *Trachymyrmex kempfi*, is described from the Chaco Basin of Paraguay. This species necessitates an expansion of the concept of the generic limits of *Trachymyrmex*.

Specimens of a new species of *Trachymyrmex* were collected in north-western Paraguay (Chaco Basin). Correspondence with the late W. W. Kempf indicated that this species was common in central Brazil and northern Argentina. At the time of his untimely death, Dr. Kempf was in the process of revising the species of *Trachymyrmex*, in which this species was to be included. Since no generic revision is imminent, I felt it imperative to provide a description and an available name for this common species.

Trachymyrmex kempfi, n.sp.

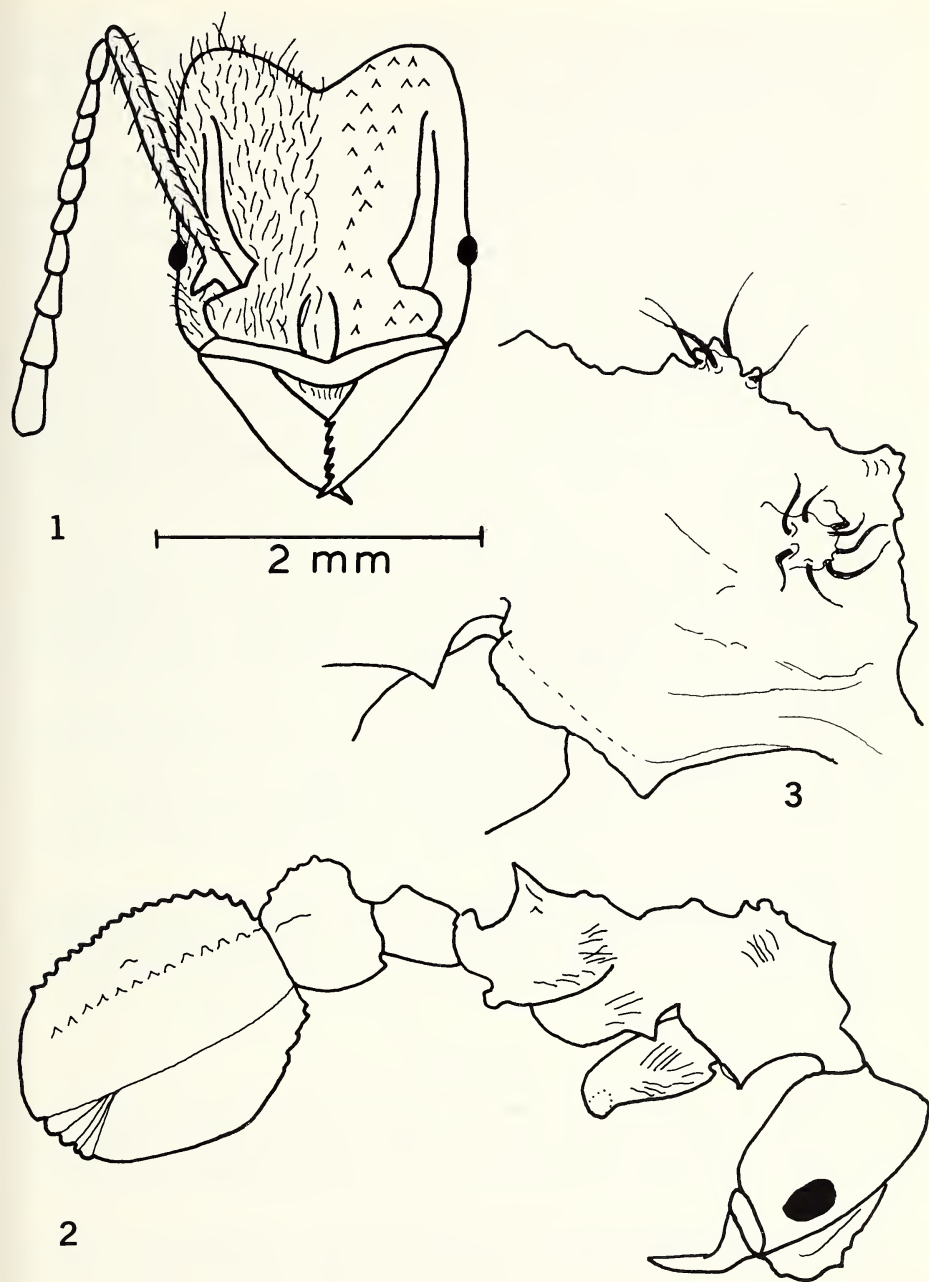
Figures 1-3

Holotype.—Worker holotype and 18 worker paratypes, Teniente Enciso, Departamento Nueva Asuncion, Paraguay, 16 August, 1975 (J. Guerrero). Holotype and 5 paratypes deposited in the Museum of Comparative Zoology. Additional paratypes are deposited in the American Museum of Natural History and the author's personal collection.

Diagnosis.—Similar to *T. iheringi* but differing in the following features: frontal carina vestigial or weakly defined in *T. iheringi*, prominent in *T. kempfi*; lobe of antennal scape 2.5× longer than broad in *T. kempfi*, less than this in *T. iheringi*; pronounced tubercle at base of epinotal spine in *T. kempfi*, absent or vestigial in *T. iheringi* (Fig. 2).

Description.—Holotype worker (all measurements in mm): (TL) total body length, 4.2; (EL) maximum length of compound eye, 0.16; (OMD) distance between lower margin of compound eye and mandibular base, 0.15; (SL) scape length, 0.73; (WL) Weber's length of alitrunk, 1.67; (HW) head

¹ Publication No. D-08001-06-82, New Jersey Agricultural Experiment Station, supported by state funds.



Figs. 1-3. *Trachymyrmex kempfi* new species: 1. Paratype worker head, frontal view, 2. Paratype worker, lateral view without appendages, 3. Paratype worker mesonotum; lateral view.

width across occiput, 1.02; (HL) head length from anterior clypeal margin to occipital margin, 1.02; (PW) pronotum width between anterior mesonotal crests, 0.57; (ML) mandible length, 0.49; (SI) scape index $((HW/SL)(100))$, 139; (CI) cephalic index, $((HW/HL)(100))$, 100.

Head: (Fig. 1) In full frontal view, as broad as long, tubercles numerous on frons and occiput; lobe of frontal carina expanded, covering antennal condyle (Fig. 1); erect setae covering antennal scape, appressed fine setae covering flagellomeres; scape fitting tightly into frontal carina; gena with erect setae; compound eye slightly raised above gena; base of antennal scape with a pronounced, protruding lobe; gula with appressed setae. Alitrunk: (Figs. 2, 3) anterior mesonotal crest $2\times$ as long as basal width, trilobed; posterior mesonotal spine poorly developed; propodeal crest poorly developed; propodeal spine $2\times$ as long as basal width, sharply pointed, with large tubercle laterally at base; propodeum with numerous tubercles dorsally and laterally; setae long and erect on propodeal spine and on dorsum of alitrunk. Prothoracic femur: expanded. Petiole: (Fig. 2) dorsum of node evenly convex; setae of dorsum short and erect, longitudinally long and appressed. Postpetiole: (Fig. 2) dorsum with long, erect setae. Gaster: (Fig. 2) first segment with many short tubercles arranged in four longitudinal rows, from which arise long, semi-erect setae; venter smooth, with short, thinner appressed hairs. Color: reddish brown.

Holotype worker bears red/handwritten label: *Trachymyrmex kempfi*/HOLOTYPE/H. Fowler 1981. Paratype workers bear green/handwritten label: *Trachymyrmex kempfi*/PARATYPE/H. Fowler 1981.

Paratypes.—TL, 3.34–4.24; EL, 0.15–0.17; OMD, 0.15–0.17; SL, 0.73–0.78; WL, 1.62–1.67; HW, 0.98–1.07; HL, 0.90–1.03; PW, 0.48–0.57; ML, 0.45–0.53; SI, 134–142, CI, 97–108.

Etymology.—This species is named in honor of the late W. W. Kempf. His cheerfulness and prompt identifications benefitted many researchers in Latin America, and his untimely death has created a void that will not easily be filled.

Discussion

The similarities of *T. kempfi* with *T. iheringi* are numerous, yet these species are easily distinguished. Emery (1887) has discussed in detail these morphological traits which distinguish *T. iheringi*, and which also hold for *T. kempfi*.

Kempf (personal communication) indicated that *T. kempfi* has a broad geographical range, extending from the Chaco Basin to Rio Grande do Sul, Brazil, and that it is much more common than *T. iheringi* which tends to occur further to the south.

Nests of *T. kempfi* consist of a small tumulus of excavated soil with one

entrance hole located on the tumulus. The workers described above were foraging on fresh leguminous vegetation, a habit common in most rangeland *Trachymyrmex*, although generally more characteristic of the genera *Atta* and *Acromyrmex* (Weber 1972).

This description of *T. kempfi* necessitates a new interpretation of the genus *Trachymyrmex*. Although *T. kempfi* is weakly polymorphic, as other species of *Trachymyrmex*, its large size overlaps with some castes of species of *Acromyrmex*. Also *T. kempfi* lacks pronounced sharp spines or large tubercles posteriorly on the head, unlike other taxa of *Trachymyrmex*, although small spines bearing tuberculate setae are present. Also, the thoracic and propodeal spines of *T. kempfi* are not well developed, which is generally characteristic of the genus. However, the alitrunk is much smoother in lateral view than is usually observed in *Trachymyrmex*. Nevertheless, *T. kempfi* will key out as a *Trachymyrmex* in the generic key of Weber (1972).

Acknowledgments

The late W. W. Kempf initially identified the species as new, and encouraged further collection of the Paraguayan fauna. N. A. Weber, R. B. Roberts, and M. DuBois all read and offered useful criticisms of the manuscript, and their interest is gratefully acknowledged.

Literature Cited

- Emery, C. 1887. Formiche della provincia di Rio Grande do Sul nel Brasile, raccolte del dott. Herman von Ihering. Bull. Soc. Entomol. Ital. 19:352-366.
Weber, N. A. 1972. Gardening ants: the attines. Mem. Amer. Philos. Soc. 92:1-146.

Department of Entomology & Economic Zoology, New Jersey Agricultural Experiment Station, Cook College, Rutgers University, New Brunswick, New Jersey 08903.

Received for publication March 2, 1981.